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Production and Management of Small-Quantity-Generator Hazardous-Waste in Florida

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ABSTRACT

Data are presented on the production and management of hazardous waste by approximately 20,000 small-quantity hazardous-waste generators (SQHWGs) in the state of Florida. SQHWGs are generators that produce less than 1,000 kilograms of hazardous-waste in a calendar month. These data were collected as part of the Florida Local-Government Hazardous-Waste Assessment Program and made available to us for analysis. There were approximately 117,000 metric tons of small-quantity-generator (SQG) hazardous waste produced annually. Approximately half of this hazardous waste is managed using the following methods: recycling, treatment, and disposal in permitted hazardous-waste-management facilities. However, large quantities of this SQG hazardous waste are disposed of in sanitary landfills and discharged to public sewers and these facilities are typically not designed to handle hazardous waste. These data indicate that there are potential environmental and human-health problems associated with the management of SQG hazardous waste in Florida as well as throughout the U.S.A.

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1. INTRODUCTION

In order to address the issue of the small-quantity hazardous-waste generator (SQHWG), as well as other solid waste concerns, the Resource Conservation and Recovery Act (RCRA) was enacted in the United States in 1976 and was amended in 1984. The RCRA provides a legal framework for coordinating federal, state, and local-government solid-waste management in the U.S.A. Subtitle D of the RCRA is concerned with waste-management facilities that are generally considered, or by regulations are defined as facilities that manage non-hazardous waste. The Proceedings of the United States Environmental Protection Agency's (U.S. EPA) Working Meeting Concerning the Monitoring and Management of Hazardous Waste at RCRA Subtitle D Facilities examined the problems associated with the management of waste from SQHWGs at RCRA Subtitle D Facilities (U.S. EPA, 1985). Also, the RCRA Subtitle D Report to Congress (U.S. EPA, 1987) contains information on the national issues associated with SQHWGs in the context of the RCRA as amended. It was generally agreed that data on the production and management of small-quantity-generator (SQG) hazardous waste is needed in order to determine the problems associated with its generation and to formulate regulations that will minimize its impact on human health and the environment. This report characterizes the types and amounts of SQG hazardous waste produced and how it is managed by approximately 20,000 firms and agencies in the state of Florida.

The RCRA regulates the management of both hazardous and non-hazardous solid waste in the U.S.A. Included in the hazardous-waste regulations developed under the RCRA are requirements for waste generators, transporters, and facility operators. A SQHWG is defined in Section 260.10, Chapter 40 of the U.S. Code of Federal Regulations as "a generator that generates less than 1,000 kilograms of hazardous waste in a calendar month." The RCRA regulations, as of March 24, 1986, define two categories of SQHWGs: (1) those generating less than 100 kilograms of hazardous waste in a calendar month, and (2) those generating between 100-1,000 kilograms of hazardous waste in a calendar month. According to federal regulations, SQHWGs that produce between 100-1,000 kilograms of hazardous waste in a calendar month must manage their waste at facilities designed and permitted under Subtitle C of the RCRA to accept hazardous waste. Generators that produce less than 100 kilograms of hazardous waste are not prohibited by federal regulations from disposing of their hazardous waste in Subtitle D facilities such as sanitary landfills.

Hazardous waste is defined in Part 261, Chapter 40 of the U.S.A. Code of Federal Regulations as waste that is characteristically either corrosive, reactive, ignitable or toxic. Each of these four characteristics is defined in the RCRA regulations in terms of the values of certain physical or chemical parameters. These four characteristics have been used by the U.S. EPA and others to develop lists of specific chemicals as well as process-waste streams that have been determined to be "hazardous."

Counties in the state of Florida vary considerably in geographic size, population, economic profile, geology, hydrology, and the number and types of waste-management facilities available in each county. Because of this diversity, it is believed that the data on SQG hazardous waste produced in Florida are generally representative of the types and quantities of SQG hazardous waste produced as well as representative of the management practices used throughout the U.S.A.

2. CONCLUSIONS

A significant amount of hazardous waste is produced by SQHWGs in Florida. Approximately half of this waste is managed by methods (recycling, treatment, and disposal in permitted hazardous-waste-management facilities) that minimize the potential to adversely impact human health and the environment. Of particular concern is the large quantity of SQG hazardous waste disposed of in sanitary landfills and discharged to public sewers, since these facilities are not typically designed to handle hazardous waste.

The waste types, that represent the greatest quantities of hazardous waste produced by SQHWGs in Florida, are waste oils and lubricants, lead-acid batteries, spent solvents, and acidic or alkaline wastes. Even though waste oils are not presently regulated as a hazardous waste under the RCRA, they were included in these data because of the potential adverse impacts of these wastes on human health and the environment.

There are potential environmental and human-health problems associated with the management of SQG hazardous waste in Florida as well as throughout the U.S.A.

3. MATERIALS AND METHODS

The SQG hazardous-waste data presented in this report were collected as part of the Florida Local Government Hazardous Waste Assessment Program. This statewide program is administered by the Florida Department of Environmental Regulation (FDER) as required under Part VI of the Water Quality Assurance Act of 1983 (Chapter 83-310, Laws of the state of Florida). These data are being used by the U.S. EPA to evaluate the various problems associated with SQG hazardous-waste management (Herndon, et al., 1988).

A major goal of the Florida Local Government Hazardous Waste Assessment Program is to address the problems associated with hazardous-waste mismanagement, particularly as this mismanagement relates to SQHWGs. The Florida Local Government Hazardous Waste Assessment Program requires all counties in Florida to conduct assessments of hazardous-waste-related activities in their jurisdictions under guidelines developed by the FDER. An important component of each county assessment is a survey of SQHWGs. These surveys are to determine the types and quantities of hazardous waste generated and the methods used to manage these wastes by SQHWGs. Although the county surveys were designed to collect data from SQHWGs, some of the survey respondents generated more than 1,000 kilograms of hazardous waste in a calendar month and, as such, are not SQHWGs. However, the waste produced by these larger-quantity hazardous-waste generators does not represent a significant portion of the total waste included in these survey data. We do not believe, therefore, that its inclusion significantly affects the overall results and conclusions of this paper.

The data are summarized according to 26 waste types, 14 waste-management methods, and 514 industries as defined by four-digit Standard Industrial Classification (SIC) codes (Office of Management and Budget, 1987). A list of 26 general types of hazardous waste was developed by the FDER and was included on the survey form in order for survey respondents to identify RCRA-related hazardous wastes produced by their operations. The county surveys identified SQHWGs within certain industries using a list of 397 four-digit SIC codes. This list of SIC codes was assembled initially by the U.S. EPA's Office of Solid Waste for use in a national survey of SQHWGs (Abt Associates, Inc., 1985), and was subsequently expanded by the FDER to 397 industries, which included industries of particular significance to the state of Florida (e.g., Boat Building and Repairing, SIC code 3732), as well as those industries that generate waste oils. Even though waste oils are not presently regulated as a hazardous waste under the RCRA, they were included in the county surveys because there is concern relative to the

environmental impacts of discarded waste oils. Data are needed to determine what quantities of waste oils are managed properly (e.g. recycled) as opposed to what quantities are managed in ways that have the potential to adversely affect human health and the environment (e.g., disposed of in Subtitle D sanitary landfills).

Some survey respondents changed the SIC code on the survey form sent to them to another SIC code that they felt more closely reflected their primary activity. These changes resulted in an increase in the number of SIC codes from the 397 industries initially included in the survey to 514.

The survey data were collected utilizing questionnaires sent through the mail or completed during on-site interviews. These surveys were conducted under a variety of agreements involving county governments, regional-planning agencies, private consultants, or a combination of these entities. The FDER coordinated the data collection activities of all counties in order to maintain consistency in the survey effort. These data were collected over the time period 1983-1986. The data collected from each survey respondent represents waste produced during one year of operation (i.e., annual data). The survey data were placed in a computer file and made available to us for analysis.

In examining the survey data in terms of the waste types generated by SIC codes, some anomalies were identified. These anomalies relate to the reported generation of, for example, dry-cleaning filters and photographic wastes by industries that typically do not generate these types of waste (e.g., plumbing, heating, and electrical establishments, gasoline-service stations, boat building, and repair shops). These anomalies were not common and we believe that they did not significantly affect the overall distributions presented in this paper of the types and quantities of SQG hazardous waste produced and the practices used to manage these wastes.

4. RESULTS AND DISCUSSION

Table 1 shows the methods used to manage SQG hazardous waste in Florida. Fourteen specific waste-management methods were grouped into seven general waste-management categories. The management method most commonly used was "Recycling" which processed approximately 42,000 metric tons annually or 36 percent of the total SQG hazardous waste produced. The second management method most commonly used was "Sent to Sanitary Landfills" which accounted for

TABLE 1. WASTE-MANAGEMENT METHODS USED FOR SQG HAZARDOUS WASTE IN FLORIDA

Waste Management Category		Annual Amount of Waste (metric tons)	Percent of Category	Percent of Total
(1) Recycling				
Sub-total:		41,562.3	100.0	35.5
(2) Sent to Sanitary Landfills				
Taken by Hauler	25,705.1		96.0	
Taken by Generator	1,069.6		4.0	
Sub-total:		26,774.7	100.0	22.9
(3) Other Methods				
Sub-total:		16,815.3	100.0	14.4
(4) Treatment				
Filtration	4,348.7		40.1	
Neutralization	3,842.5		35.5	
Incineration	1,131.9		10.4	
Burned or Blended for Fuel	1,515.2		14.0	
Sub-total:		10,838.3	100.0	9.3
(5) Discharged to Public Sewers				
Sub-total:		10,403.5	100.0	8.9
(6) Disposed on Property				
Buried on Property	2,338.7		40.5	
Discharged to Septic Tanks	1,837.2		31.8	
Disposed in Pit, Pond, or Lagoon	1,266.8		21.9	
Injected into Wells	331.0		5.7	
Sub-total:		5,773.7	100.0	4.9
(7) Sent to Permitted Facilities*				
Sub-total:		4,874.9	100.0	4.2
Total:		**117,042.7**		**100**

* Off-site commercial facilities permitted to handle hazardous waste under the RCRA.

approximately 27,000 metric tons annually or 23 percent of the total SQG hazardous waste produced. The third management method most commonly used was "Other Methods" which accounted for approximately 17,000 metric tons annually or 15 percent of the total SQG hazardous waste produced. "Other Methods" was an option included on the survey form; however, the survey respondents were not asked to identify what specific management practices were actually employed when the "Other Methods" category was used.

Approximately 11,000 metric tons or 9 percent of the total SQG hazardous waste produced annually was managed by "Treatment" (Table 1). Treatment methods included "Filtration" (40 percent of treated SQG hazardous waste), "Neutralization" (36 percent of treated SQG hazardous waste), "Incineration" (10 percent of treated SQG hazardous waste), and "Burned or Blended for Fuel" (14 percent of treated SQG hazardous waste). Approximately 10,000 metric tons or 9 percent of the total SQG hazardous waste produced annually, was "Discharged to Public Sewers." In addition, approximately 6,000 metric tons or 5 percent of the total SQG hazardous waste generated annually was "Disposed on Property" by the SQHWGs. This included "Buried on Property" (41 percent of SQG hazardous waste disposed on property), "Discharged to Septic Tanks" (32 percent of SQG hazardous waste disposed on property), "Disposed in Pit, Pond, or Lagoon" (22 percent of SQG hazardous waste disposed on property), and "Injected into Wells" (6 percent of SQG hazardous waste disposed on property). Off-site commercial facilities permitted to manage hazardous waste under the RCRA received approximately 5,000 metric tons or 4 percent of the SQG hazardous waste generated annually.

"Recycling", "Treatment", and "Sent to Permitted Facilities" represent SQG hazardous-waste-management methods that minimize the potential to adversely impact human health and the environment. "Sent to Sanitary Landfills", "Other Methods", "Discharged to Public Sewers", and "Disposed on Property" represent SQG hazardous-waste-management methods that have a greater potential to adversely impact human health and the environment. Therefore, from Table 1, it can be seen that approximately 49 percent or 57,000 metric tons of the SQG hazardous waste produced annually is managed in an acceptable manner while 51 percent or 60,000 metric tons is managed in a less acceptable manner.

Table 2 shows the types and annual amounts of SQG hazardous waste produced in Florida and the waste-management methods used to manage these waste. The waste type "Other" includes hazardous waste not reported as one of the other 25 types included on the survey form. Survey respondents were not asked to identify the specific types of hazardous waste

TABLE 2. TYPES AND ANNUAL AMOUNTS (METERIC TONS) OF SQG HAZARDOUS WASTE PRODUCED IN FLORIDA BY WASTE-MANAGEMENT CATEGORY

Waste Type	Total Waste		Waste Management Category													
			Recycling		Sanitary Landfills		Other		Treatment		Public Sewers		Disposed on Property		Permitted Facilities	
	Amount	%*	Amount	%**	Amount	%**	Amount	%**	Amount	%**	Amount	%**	Amount	%**	Amount	%**
Waste Oils, Lubricants	41,329.8	35.3	21,021.9	50.7	12,108.0	45.2	3,717.8	22.1	3,192.5	29.5	60.7	<1.0	719.6	12.5	516.0	10.6
Lead-Acid Batteries	16,674.6	14.2	10,245.1	24.6	3,100.7	11.6	1,918.5	11.4	1,328.4	12.3	3.8	<1.0	30.7	<1.0	50.5	1.0
Spent Solvents	12,129.5	10.4	4,516.7	10.9	3,001.8	11.2	1,510.4	9.0	1,410.4	13.0	339.8	3.3	427.8	7.4	923.8	19.0
Acidic or Alkaline Wastes	9,963.1	8.5	1,761.5	4.2	985.4	3.7	2,254.6	13.4	1,949.6	18.0	2,030.3	19.5	904.7	15.7	76.7	1.6
Rinses with Heavy Metals	7,571.1	6.5	688.0	1.7	922.5	3.5	1,665.7	9.9	1,048.4	9.7	2,792.9	26.8	374.6	6.5	79.0	1.6
Sludges with Heavy Metals	5,979.1	5.1	254.9	<1.0	1,318.0	4.9	1,364.0	8.1	14.1	<1.0	500.4	4.8	1,582.9	27.4	944.2	19.4
Photographic Wastes	5,514.9	4.7	442.8	1.1	252.7	1.0	340.0	2.0	82.2	<1.0	3,902.1	37.5	487.9	8.5	6.7	<1.0
Other	3,224.4	2.7	484.5	1.2	1,572.3	5.9	304.2	1.8	504.5	4.7	163.8	1.6	122.1	2.1	72.7	1.5
Spent Plating Wastes	2,313.0	2.0	40.8	<1.0	49.9	<1.0	927.8	5.5	473.7	4.4	165.9	1.6	111.4	1.9	542.8	11.1
Dust with Heavy Metals	2,287.5	1.9	752.4	1.8	996.5	3.7	462.8	2.8	1.1	<1.0	28.5	<1.0	29.0	<1.0	17.1	<1.0
Ignitable Paint Waste	2,117.8	1.8	474.6	1.1	505.6	1.9	213.9	1.3	115.4	1.1	4.3	<1.0	41.0	<1.0	762.8	15.6
Ignitable Wastes	1,492.8	1.3	41.7	<1.0	654.9	2.5	504.8	3.0	101.8	<1.0	9.4	<1.0	12.6	<1.0	166.8	3.4
Waste Ammonia	866.7	<1.0	10.9	<1.0	4.8	<1.0	115.0	<1.0	377.1	3.5	20.6	<1.0	1.7	<1.0	336.4	6.9
Washing Solutions	855.6	<1.0	183.3	<1.0	74.0	<1.0	147.3	<1.0	45.3	<1.0	121.4	1.2	282.4	4.9	1.2	<1.0
Empty Pesticide Containers	743.8	<1.0	177.8	<1.0	290.2	1.1	189.0	1.1	13.9	<1.0	<0.1	<0.1	52.8	<1.0	19.5	<1.0
Other Pesticide Solutions	627.2	<1.0	61.7	<1.0	25.0	<1.0	66.3	<1.0	1.0	<1.0	11.0	<1.0	461.6	8.0	<0.1	<0.1
Paint Waste with Heavy Metals	626.2	<1.0	142.4	<1.0	319.9	1.2	108.9	<1.0	6.9	<1.0	10.8	<1.0	9.7	<1.0	27.4	<1.0
Waste Ink	617.0	<1.0	110.7	<1.0	125.0	<1.0	145.8	<1.0	69.6	<1.0	91.3	<1.0	2.6	<1.0	71.6	1.5
Cyanide Wastes	604.2	<1.0	37.2	<1.0	25.6	<1.0	505.5	3.0	1.6	<1.0	29.0	<1.0	0.2	<1.0	4.3	<1.0
Solvent Still Bottoms	594.9	<1.0	68.0	<1.0	165.4	<1.0	68.5	<1.0	17.6	<1.0	12.7	<1.0	27.4	<1.0	234.6	4.8
Waste Pesticides	329.8	<1.0	1.8	<1.0	40.5	<1.0	197.1	1.2	41.6	<1.0	7.2	<1.0	35.3	<1.0	6.1	<1.0
Waste Formaldehyde	197.8	<1.0	<0.1	<0.1	19.5	<1.0	21.9	<1.0	5.8	<1.0	94.0	<1.0	51.8	<1.0	4.3	<1.0
Dry Cleaning Filters	182.8	<1.0	6.4	<1.0	104.3	<1.0	32.9	<1.0	32.2	<1.0	0.6	<1.0	<0.1	<0.1	5.8	<1.0
Wood Preservatives	133.0	<1.0	16.3	<1.0	102.9	<1.0	2.2	<1.0	0.6	<1.0	2.6	<1.0	3.1	<1.0	4.6	<1.0
Waste Explosives	55.7	<1.0	20.9	<1.0	9.1	<1.0	21.7	<1.0	3.0	<1.0	0.4	<1.0	<0.1	<0.1	<0.1	<0.1
Spent Solutions from Dipping	10.4	<1.0	<0.1	<0.1	0.2	<1.0	8.7	<1.0	<0.1	<0.1	<0.1	<0.1	0.8	<1.0	<0.1	<0.1
Total:	117,042.7	100	41,562.3	100	26,774.7	100	16,815.3	100	10,838.3	100	10,403.5	100	5,773.7	100	4,874.9	100

* Percent of total SQG hazardous-waste.

** Percent of SQG hazardous waste within waste-management category.

that were actually generated when the "Other" waste type was indicated.

The largest quantity of SQG hazardous waste produced was "Waste Oils, Lubricants" which accounted for 35 percent or 41,000 metric tons of the SQG hazardous waste produced annually. Approximately half (21,000 metric tons) of this waste was recycled while 12,000 metric tons were disposed of in sanitary landfills. "Lead-Acid Batteries" accounted for 14 percent or 17,000 metric tons of the SQG hazardous waste produced annually. Most of this (10,000 metric tons) was recycled. "Spent Solvents" accounted for 10 percent or 12,000 metric tons of the SQG hazardous waste produced annually. Most of this was recycled (5,000 metric tons) or disposed of in sanitary landfills (3,000 metric tons). Significant amounts of "Acidic or Alkaline Wastes", "Rinses with Heavy Metals", "Sludges with Heavy Metals", "Photographic Wastes", "Other", "Spent Plating Wastes", "Dust with Heavy Metals", "Ignitable Paint Waste", and Ignitable Wastes" were produced. Lesser amounts of "Waste Ammonia", "Washing Solutions", "Empty Pesticide Containers", "Other Pesticide Solutions", "Paint Waste with Heavy Metals", "Waste Ink", "Cyanide Wastes", "Solvent Still Bottoms", "Waste Pesticides", "Waste Formaldehyde", "Dry Cleaning Filters", "Wood Preservatives", "Waste Explosives", and "Spent Solutions from Dipping" were produced.

Approximately half of all of the waste recycled was "Waste Oils, Lubricants", while "Lead-Acid Batteries" accounted for 25 percent. The other major waste recycled was "Spent Solvents" which accounted for 11 percent. The major wastes disposed of in sanitary landfills were: "Waste Oils, Lubricants" (45 percent), "Lead-Acid Batteries" (12 percent), and "Spent Solvents" (11 percent). Approximately 30 percent of the waste treated was "Waste Oils, Lubricants", while 18 percent of the waste treated was "Acidic or Alkaline Wastes", 13 percent was "Spent Solvents" and 12 percent was "Lead-Acid Batteries." The major wastes discharged to public sewers were "Photographic Wastes" (38 percent), "Rinses with Heavy Metals" (27 percent), and "Acidic or Alkaline Wastes" (20 percent). The major waste types disposed on the property of SQHWGs were "Sludges with Heavy Metals" (27 percent), "Acidic or Alkaline Wastes" (16 percent), "Waste Oils, Lubricants" (13 percent), "Photographic Wastes" (9 percent), "Other Pesticide Solutions" (8 percent), "Spent Solvents" (7 percent), "Rinses with Heavy Metals" (7 percent), and "Washing Solutions" (5 percent). The major waste types sent to permitted hazardous-waste-management facilities were "Sludges with Heavy Metals" (19 percent), "Spent Solvents" (19 percent), "Ignitable Paint Waste" (16 percent), "Spent Plating Wastes" (11 percent), "Waste Oils, Lubricants" (11

percent), "Waste Ammonia" (7 percent), "Solvent Still Bottoms" (5 percent), and "Ignitable Wastes" (3 percent).

Table 3 shows the quantities of SQG hazardous waste distributed among the seven waste-management categories shown in Table 1, and over the industries (SIC codes) that generated these wastes. Table 4 provides a description for each of the industries (SIC codes) shown in Table 3. The first 15 industries shown in Table 3 produced almost 60 percent of the SQG hazardous waste generated in the state of Florida (each of the remaining 499 industries in the data base contribute 1 percent or less of the SQG hazardous waste produced). The 42 SIC codes contained in Table 3 account for approximately 77 percent of the SQG hazardous waste generated (each of the other 472 industries not shown contribute less than 0.5 percent to the total amount of SQG hazardous waste generated). (See Appendix A-1 and A-2 for expanded versions of Tables 3 and 4.)

The industries that produced the greatest quantities of SQG hazardous waste were "Gasoline Service Stations, Retail", "General Automotive Repair Shops", "Automotive & Home Supply Stores", "Motor Vehicle Dealers (New & Used)", "Automotive Repair Shops, Not Elsewhere Classified", "Electronic Components, Not elsewhere Classified", "Photofinishing Laboratories", and "Executive & Legislative Combined." Much of the waste generated by the first 15 industries is recycled; however, a significant portion of these wastes are managed in ways that have the potential to adversely impact human health and the environment. The industries that sent the most SQG hazardous waste to sanitary landfills were "Gasoline Service Stations, Retail", "General Automotive Repair Shops", "Automotive & Home Supply Stores", "Motor Vehicle Dealers (New & Used)", "Automotive Repair Shops, Not Elsewhere Classified", and "Electronic Components, Not elsewhere Classified." The industries that discharged the greatest volume of SQG hazardous waste to public sewers were "Automotive Repair Shops, Not Elsewhere Classified", "Photofinishing Laboratories", and "Electroplating, Polishing, Plating, Anodizing." The "Electronic Components, Not Elsewhere Classified" industry was the main user of permitted hazardous-waste-management facilities for the disposal of its SQG hazardous waste.

These data indicate that considerable quantities of SQG hazardous waste are produced in Florida and that much of this waste is not properly managed. From the discussion presented in the Introduction, it is believed that these data on SQG hazardous waste produced in Florida are generally representative of the types and quantities of SQG hazardous waste produced, as well as representative of the management practices used, by SQHWGs throughout the U.S.A.

TABLE 3. CATEGORIES OF WASTE-MANAGEMENT METHODS USED AND AMOUNTS (METRIC TONS) OF WASTE GENERATED BY SELECTED INDUSTRIES (SIC CODES) IN FLORIDA*

SIC Code	Total Waste		Waste Management Category													
			Recycling		Sanitary Landfills		Other		Treatment		Public Sewers		Disposed on Property		Permitted Facilities	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
5541	13,121.4	11.2	5,199.4	12.5	4,562.9	17.0	2,058.2	12.2	731.2	6.7	306.9	3.0	207.0	3.6	55.8	1.1
7538	12,039.8	10.3	6,920.3	16.7	2,942.9	11.0	792.7	4.7	676.5	6.2	529.9	5.1	105.0	1.8	72.5	1.5
5531	7,866.9	6.7	4,451.5	10.7	1,508.0	5.6	926.1	5.5	764.7	7.1	112.9	1.1	85.5	1.5	18.2	0.4
5511	7,410.6	6.3	3,298.8	7.9	2,342.2	8.7	369.4	2.2	927.2	8.6	157.0	1.5	264.4	4.6	51.6	1.1
7539	6,365.5	5.4	2,626.7	6.3	1,151.0	4.3	813.1	4.8	355.5	3.3	1,045.8	10.1	339.2	5.9	34.2	0.7
3679	5,014.9	4.3	590.7	1.4	890.8	3.3	128.1	0.8	1,305.2	12.0	43.0	0.4	195.1	3.4	1,862.0	38.2
7395	3,067.3	2.6	718.2	1.7	163.0	0.6	48.7	0.3	36.5	0.3	1,733.3	16.7	365.4	6.3	2.2	<0.1
9131	2,290.5	2.0	887.6	2.1	364.5	1.4	290.3	1.7	147.5	1.4	34.9	0.3	547.8	9.5	17.9	0.4
5311	2,194.8	1.9	1,159.0	2.8	658.5	2.5	259.9	1.5	106.3	1.0	6.5	0.1	4.6	0.1	<0.1	<0.1
3471	2,008.9	1.7	330.6	0.8	55.3	0.2	236.9	1.4	44.0	0.4	918.6	8.8	215.7	3.7	207.8	4.3
7531	1,771.5	1.5	716.7	1.7	351.0	1.3	665.1	4.0	14.8	0.1	1.9	<0.1	9.0	0.2	13.0	0.3
3662	1,586.7	1.4	196.6	0.5	14.0	0.1	919.8	5.5	15.3	0.1	188.4	1.8	1.0	<0.1	251.6	5.2
1711	1,278.1	1.1	233.6	0.6	405.6	1.5	175.4	1.0	2.2	<0.1	5.4	0.1	455.9	7.9	<0.1	<0.1
5093	1,260.7	1.1	697.3	1.7	77.5	0.3	14.0	0.1	458.5	4.2	<0.1	<0.1	13.4	0.2	<0.1	<0.1
3079	1,237.5	1.1	558.9	1.3	118.3	0.4	14.8	0.1	234.3	2.2	229.6	2.2	0.5	<0.1	81.1	1.7
4213	1,207.5	1.0	631.1	1.5	334.9	1.3	190.8	1.1	26.0	0.2	6.5	0.1	7.9	0.1	10.3	0.2
1611	1,194.6	1.0	642.2	1.5	247.7	0.9	59.7	0.4	182.4	1.7	1.6	<0.1	54.4	0.9	6.6	0.1
4952	1,174.2	1.0	95.9	0.2	534.8	2.0	68.8	0.4	<0.1	<0.1	<0.1	<0.1	474.7	8.2	<0.1	<0.1
3731	1,149.6	1.0	375.9	0.9	51.4	0.2	0.1	<0.1	4.8	<0.1	<0.1	<0.1	350.9	6.1	366.5	7.5
7399	1,134.1	1.0	212.9	0.5	195.6	0.7	507.1	3.0	53.1	0.5	150.1	1.4	1.7	<0.1	13.6	0.3
7512	1,003.5	0.9	203.9	0.5	92.6	0.3	672.2	4.3	19.1	0.2	5.8	0.1	5.7	0.1	4.2	0.1
5521	962.3	0.8	407.4	1.0	236.3	0.9	183.4	1.1	9.2	0.1	4.1	<0.1	121.9	2.1	<0.1	<0.1
7699	931.9	0.8	464.1	1.1	291.7	1.1	29.3	0.2	16.8	0.2	2.1	<0.1	103.0	1.8	24.9	0.5
2851	840.1	0.7	332.0	0.8	121.3	0.5	37.2	0.2	45.4	0.4	<0.1	<0.1	1.5	<0.1	302.7	6.2
4911	822.6	0.7	505.6	1.2	19.8	0.1	113.1	0.7	172.9	1.6	<0.1	<0.1	2.3	<0.1	8.9	0.2
3732	817.7	0.7	415.5	1.0	254.6	1.0	78.3	0.5	12.6	0.1	<0.1	<0.1	1.1	<0.1	55.6	1.1
3691	790.7	0.7	618.1	1.5	116.7	0.4	20.6	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	35.3	0.7
4212	782.1	0.7	408.3	1.0	43.8	0.2	31.9	0.2	295.2	2.7	0.2	<0.1	2.7	<0.1	<0.1	<0.1
7333	768.7	0.7	135.5	0.3	56.2	0.2	14.3	0.1	9.7	0.1	542.9	5.2	10.1	0.2	<0.1	<0.1
3444	743.1	0.6	18.7	<0.1	60.8	0.2	153.4	0.9	474.9	4.4	4.1	<0.1	6.3	0.1	24.9	0.5
8999	683.7	0.6	122.8	0.3	191.0	0.7	67.5	0.4	215.1	2.0	36.6	0.4	0.3	<0.1	50.4	1.0
2899	663.7	0.6	33.4	0.1	0.1	<0.1	23.9	0.1	453.7	4.2	0.1	<0.1	0.2	<0.1	152.3	3.1
4511	646.4	0.6	25.4	0.1	384.3	1.4	235.3	1.4	1.0	<0.1	0.2	<0.1	<0.1	<0.1	0.2	<0.1
4582	645.5	0.6	300.3	0.7	242.7	0.9	61.1	0.4	15.8	0.1	13.8	0.1	6.4	0.1	5.4	0.1
7513	638.7	0.5	212.1	0.5	130.3	0.5	17.2	0.1	157.2	1.5	13.6	0.1	108.3	1.9	<0.1	<0.1
1721	617.2	0.5	26.7	0.1	104.8	0.4	12.9	0.1	4.3	<0.1	454.3	4.4	3.9	0.1	10.3	0.2
2751	587.3	0.5	40.5	0.1	91.0	0.3	212.4	1.3	73.5	0.7	140.1	1.3	16.2	0.3	13.6	0.3
2032	587.2	0.5	6.2	<0.1	<0.1	<0.1	34.5	0.2	538.6	5.0	6.4	0.1	1.5	<0.1	<0.1	<0.1
3590	568.7	0.5	73.1	0.2	210.8	0.8	284.8	1.7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2711	564.4	0.5	36.1	0.1	21.2	0.1	41.0	0.2	4.9	<0.1	418.2	4.0	2.5	<0.1	40.5	0.8
3692	544.7	0.5	453.6	1.1	0.7	<0.1	<0.1	<0.1	<0.1	<0.1	10.6	0.1	<0.1	<0.1	79.8	1.6
8062	536.5	0.5	130.8	0.3	54.7	0.2	58.2	0.3	69.0	0.6	195.6	1.9	26.7	0.5	1.5	<0.1
Totals:	**90,121.8**	**77.3**	**35,514.0**		**19,695.3**		**10,921.5**		**8,674.9**		**7,321.0**		**4,119.7**		**3,875.4**	

* There are 514 Standard Industrial Classification (SIC) codes included in the survey data base. The 42 SIC codes grouped in this table comprise 77.3 percent of the total SQG hazardous waste produced annually in Florida. Each of the remaining 472 SIC codes contributes less than 0.5 percent of the total SQG hazardous waste generated.

TABLE 4. DESCRIPTION OF SELECTED INDUSTRIES (SIC CODES) SHOWN IN TABLE 3

SIC Code	Description
5541	Gasoline Service Stations, Retail
7538	General Automotive Repair Shops
5531	Automotive & Home Supply Stores
5511	Motor Vehicle Dealers (New & Used)
7539	Automotive Repair Shops, Not Elsewhere Classified
3679	Electronic Components, Not Elsewhere Classified
7395	Photofinishing Laboratories
9131	Executive & Legislative Combined
5311	Department Stores
3471	Electroplating, Polishing, Plating, Anod.
7531	Top & Body Repair Shops, Automotive
3662	Radio & Television Transmitting
1711	Plumbing, Heating & Air Conditioning
5093	Scrap & Waste Materials, Wholesale
3079	Miscellaneous Plastic Products, Not Elsewhere Classified
4213	Trucking, Except Local
1611	Highway and Street Construction
4952	Sewerage Systems
3731	Ship Building and Repairing
7399	Fire Extinguisher Charging Services
7512	Passenger Car Rental and Leasing, without Drivers
5521	Motor Vehicle Dealers (Used Only)
7699	Repair Shops and Related Services, Not Elsewhere Classified
2851	Paint and Allied Products
4911	Electric Services
3732	Boat Building and Repairing
3691	Storage Batteries
4212	Local Trucking without Storage
7333	Commercial Photography Art, and Graphics
3444	Sheet Metal Work
8999	Services, Not Elsewhere Classified
2899	Chemical Preparations
4511	Air Transportation, Certificated Carriers
4582	Airports and Flying Fields
7513	Trucking Rental and Leasing, without Drivers
1721	Painting, Paper Hanging, and Decorating, Heavy Construction, Not Elsewhere Classified
2751	Commercial Printing, Letterpress and Screen
2032	Canned Specialties
3590	Miscellaneous Machinery, Except Electrical
2711	Newspapers: Publishing and Printing
3692	Primary Batteries, Dry and Wet
8062	General Medical and Surgical Hospitals

Therefore, based on these data, it is expected that there may be potential environmental and human-health problems associated with the management of SQG hazardous waste in the United States. Of particular concern is the amount of SQG hazardous waste disposed of in facilities not designed to handle hazardous wastes, e.g., the 27,000 metric tons annually disposed of in sanitary landfills and the 10,000 metric tons annually discharged to public sewers.

REFERENCES

Abt Associates, Inc. (1985), National Hazardous Waste Small Quantity Survey, U.S. Environmental Protection Agency, Washington, D.C., U.S.A.

Herndon, R.C., Koutsandreas, J.D., Lambou, V.W., & Moerlins, J.E. (1988), Florida Hazardous Waste and Sanitary Landfill Report, EPA 600/4-88/008A-K. U.S. Environmental Protection Agency, Las Vegas, Nevada, U.S.A.

Office of Management and Budget (1987), Standard Industrial Classification Manual, NTIS Publication No. PB 87-100012, Executive Office of the President, Washington, D.C., U.S.A.

U.S. EPA, (1985), Proceedings of the Working Meeting Concerning Requirements for the Monitoring and Management of Hazardous Waste at RCRA Subtitle D Facilities, U.S. Environmental Protection Agency, Washington, D.C., U.S.A.

U.S. EPA, (1987), Resource Conservation and Recovery Act Subtitle D Report to Congress, U.S. Environmental Protection Agency, Washington, D.C., U.S.A.

APPENDIX A-1

CATEGORIES OF WASTE-MANAGEMENT METHODS USED AND AMOUNTS (METRIC TONS) OF WASTE GENERATED BY INDUSTRY (SIC CODES) IN FLORIDA.*

SIC	Total Waste		Waste Management Category															
			Recycling		Sanitary Landfills		Other		Treatment		Public Sewers		Disposed on Property		Permitted Facilities	
Code**	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
5541	13,121.4	11.2	5,199.4	12.5	4,562.9	17.0	2,058.2	12.2	731.2	6.7	306.9	3.0	207.0	3.6	55.8	1.1
7538	12,039.8	10.3	6,920.3	16.7	2,942.9	11.0	792.7	4.7	676.5	6.2	529.9	5.1	105.0	1.8	72.5	1.5
5531	7,866.9	6.7	4,451.5	10.7	1,508.0	5.6	926.1	5.5	764.7	7.1	112.9	1.1	85.5	1.5	18.2	0.4
5511	7,410.6	6.3	3,298.8	7.9	2,342.2	8.7	369.4	2.2	927.2	8.6	157.0	1.5	264.4	4.6	51.6	1.1
7539	6,365.5	5.4	2,626.7	6.3	1,151.0	4.3	813.1	4.8	355.5	3.3	1,045.8	10.1	339.2	5.9	34.2	0.7
3679	5,014.9	4.3	590.7	1.4	890.8	3.3	128.1	0.8	1,305.2	12.0	43.0	0.4	195.1	3.4	1,862.0	38.2
7395	3,067.3	2.6	718.2	1.7	163.0	0.6	48.7	0.3	36.5	0.3	1,733.3	16.7	365.4	6.3	2.2	<0.1
9131	2,290.5	2.0	887.6	2.1	364.5	1.4	290.3	1.7	147.5	1.4	34.9	0.3	547.8	9.5	17.9	0.4
5311	2,194.8	1.9	1,159.0	2.8	658.5	2.5	259.9	1.5	106.3	1.0	6.5	0.1	4.6	0.1	<0.1	<0.1
3471	2,008.9	1.7	330.6	0.8	55.3	0.2	236.9	1.4	44.0	0.4	918.6	8.8	215.7	3.7	207.8	4.3
7531	1,771.5	1.5	716.7	1.7	351.0	1.3	665.1	4.0	14.8	0.1	1.9	<0.1	9.0	0.2	13.0	0.3
3662	1,586.7	1.4	196.6	0.5	14.0	0.1	919.8	5.5	15.3	0.1	188.4	1.8	1.0	<0.1	251.6	5.2
1711	1,278.1	1.1	233.6	0.6	405.6	1.5	175.4	1.0	2.2	<0.1	5.4	0.1	455.9	7.9	<0.1	<0.1
5093	1,260.7	1.1	697.3	1.7	77.5	0.3	14.0	0.1	458.5	4.2	<0.1	<0.1	13.4	0.2	<0.1	<0.1
3079	1,237.5	1.1	558.9	1.3	118.3	0.4	14.8	0.1	234.3	2.2	229.6	2.2	0.5	<0.1	81.1	1.7
4213	1,207.5	1.0	631.1	1.5	334.9	1.3	190.8	1.1	26.0	0.2	6.5	0.1	7.9	0.1	10.3	0.2
1611	1,194.6	1.0	642.2	1.5	247.7	0.9	59.7	0.4	182.4	1.7	1.6	<0.1	54.4	0.9	6.6	0.1
4952	1,174.2	1.0	95.9	0.2	534.8	2.0	68.8	0.4	<0.1	<0.1	<0.1	<0.1	474.7	8.2	<0.1	<0.1
3731	1,149.6	1.0	375.9	0.9	51.4	0.2	0.1	<0.1	4.8	<0.1	<0.1	<0.1	350.9	6.1	366.5	7.5
7399	1,134.1	1.0	212.9	0.5	195.6	0.7	507.1	3.0	53.1	0.5	150.1	1.4	1.7	<0.1	13.6	0.3
7512	1,003.5	0.9	203.9	0.5	92.6	0.3	672.2	4.3	19.1	0.2	5.8	0.1	5.7	0.1	4.2	0.1
5521	962.3	0.8	407.4	1.0	236.3	0.9	183.4	1.1	9.2	0.1	4.1	<0.1	121.9	2.1	<0.1	<0.1
7699	931.9	0.8	464.1	1.1	291.7	1.1	29.3	0.2	16.8	0.2	2.1	<0.1	103.0	1.8	24.9	0.5
2851	840.1	0.7	332.0	0.8	121.3	0.5	37.2	0.2	45.4	0.4	<0.1	<0.1	1.5	<0.1	302.7	6.2
4911	822.6	0.7	505.6	1.2	19.8	0.1	113.1	0.7	172.9	1.6	<0.1	<0.1	2.3	<0.1	8.9	0.2
3732	817.7	0.7	415.5	1.0	254.6	1.0	78.3	0.5	12.6	0.1	<0.1	<0.1	1.1	<0.1	55.6	1.1
3691	790.7	0.7	618.1	1.5	116.7	0.4	20.6	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	35.3	0.7
4212	782.1	0.7	408.3	1.0	43.8	0.2	31.9	0.2	295.2	2.7	0.2	<0.1	2.7	<0.1	<0.1	<0.1
7333	768.7	0.7	135.5	0.3	56.2	0.2	14.3	0.1	9.7	0.1	542.9	5.2	10.1	0.2	<0.1	<0.1
3444	743.1	0.6	18.7	<0.1	60.8	0.2	153.4	0.9	474.9	4.4	4.1	<0.1	6.3	0.1	24.9	0.5
8999	683.7	0.6	122.8	0.3	191.0	0.7	67.5	0.4	215.1	2.0	36.6	0.4	0.3	<0.1	50.4	1.0
2899	663.7	0.6	33.4	0.1	0.1	<0.1	23.9	0.1	453.7	4.2	0.1	<0.1	0.2	<0.1	152.3	3.1
4511	646.4	0.6	25.4	0.1	384.3	1.4	235.3	1.4	1.0	<0.1	0.2	<0.1	<0.1	<0.1	0.2	<0.1
4582	645.5	0.6	300.3	0.7	242.7	0.9	61.1	0.4	15.8	0.1	13.8	0.1	6.4	0.1	5.4	0.1
7513	638.7	0.5	212.1	0.5	130.3	0.5	17.2	0.1	157.2	1.5	13.6	0.1	108.3	1.9	<0.1	<0.1
1721	617.2	0.5	26.7	0.1	104.8	0.4	12.9	0.1	4.3	<0.1	454.3	4.4	3.9	0.1	10.3	0.2
2751	587.3	0.5	40.5	0.1	91.0	0.3	212.4	1.3	73.5	0.7	140.1	1.3	16.2	0.3	13.6	0.3
2032	587.2	0.5	6.2	<0.1	<0.1	<0.1	34.5	0.2	538.6	5.0	6.4	0.1	1.5	<0.1	<0.1	<0.1
3590	568.7	0.5	73.1	0.2	210.8	0.8	284.8	1.7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2711	564.4	0.5	36.1	0.1	21.2	0.1	41.0	0.2	4.9	<0.1	418.2	4.0	2.5	<0.1	40.5	0.8
3692	544.7	0.5	453.6	1.1	0.7	<0.1	<0.1	<0.1	<0.1	<0.1	10.6	0.1	<0.1	<0.1	79.8	1.6
8062	536.5	0.5	130.8	0.3	54.7	0.2	58.2	0.3	69.0	0.6	195.6	1.9	26.7	0.5	1.5	<0.1
2752	524.9	0.4	59.1	0.1	170.4	0.6	61.6	0.4	0.2	<0.1	133.1	1.3	95.4	1.7	5.2	0.1
7535	523.3	0.4	67.1	0.2	327.7	1.2	116.7	0.7	1.6	<0.1	0.3	<0.1	6.1	0.1	3.9	0.1
3354	508.5	0.4	54.9	0.1	453.6	1.7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
3441	492.5	0.4	2.2	<0.1	1.2	<0.1	0.3	<0.1	483.8	4.5	0.1	<0.1	4.8	0.1	<0.1	<0.1
9999	479.9	0.4	81.3	0.2	2.8	<0.1	217.5	1.3	4.8	<0.1	1.8	<0.1	3.9	0.1	167.9	3.4
3551	473.1	0.4	87.4	0.2	1.6	<0.1	4.1	<0.1	0.3	<0.1	378.3	3.6	0.2	<0.1	1.1	<0.1
9711	465.0	0.4	59.6	0.1	133.9	0.5	231.4	1.4	1.0	<0.1	35.8	0.3	<0.1	<0.1	3.4	0.1
2291	456.5	0.4	<0.1	<0.1	<0.1	<0.1	453.6	2.7	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	2.7	0.1

APPENDIX A-1 (Continued)

SIC Code**	Total Waste		Waste Management Category													
			Recycling		Sanitary Landfills		Other		Treatment		Public Sewers		Disposed on Property		Permitted Facilities	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
3253	454.1	0.4	<0.1	<0.1	0.3	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	453.6	7.9	<0.1	<0.1
3819	454.0	0.4	0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	453.6	4.4	<0.1	<0.1	<0.1	<0.1
5150	453.6	0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	453.6	4.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
4953	451.0	0.4	250.6	0.6	94.5	0.4	13.7	0.1	86.9	0.8	<0.1	<0.1	5.3	0.1	<0.1	<0.1
7349	444.2	0.4	149.1	0.4	198.1	0.7	17.0	0.1	0.1	<0.1	63.2	0.6	16.2	0.3	<0.1	<0.1
7342	433.7	0.4	148.7	0.4	87.6	0.3	124.8	0.7	12.8	0.1	15.9	0.2	44.4	0.8	<0.1	<0.1
4469	414.7	0.4	109.8	0.3	175.5	0.7	40.4	0.2	36.0	0.3	15.8	0.2	35.5	0.6	1.5	<0.1
7999	395.8	0.3	86.0	0.2	279.3	1.0	11.8	0.1	0.3	<0.1	1.4	<0.1	17.1	0.3	<0.1	<0.1
1761	394.6	0.3	21.9	0.1	321.5	1.2	2.6	<0.1	33.4	0.3	12.0	0.1	1.9	<0.1	1.3	<0.1
2821	394.5	0.3	195.6	0.5	1.3	<0.1	122.1	0.7	37.2	0.3	<0.1	<0.1	0.1	<0.1	38.2	0.8
3911	367.9	0.3	1.1	<0.1	4.4	<0.1	354.9	2.1	0.3	<0.1	1.5	<0.1	<0.1	<0.1	5.7	0.1
1799	364.1	0.3	77.3	0.2	99.1	0.4	166.0	1.0	6.7	0.1	4.4	<0.1	0.7	<0.1	9.9	0.2
8060	346.7	0.3	31.7	0.1	3.5	<0.1	91.6	0.5	11.6	0.1	203.3	2.0	4.5	0.1	0.6	<0.1
3599	344.1	0.3	90.6	0.2	121.9	0.5	19.3	0.1	43.2	0.4	28.5	0.3	17.7	0.3	22.9	0.5
3442	340.7	0.3	16.9	<0.1	57.9	0.2	0.7	<0.1	21.2	0.2	243.9	2.3	0.2	<0.1	<0.1	<0.1
7641	338.6	0.3	73.9	0.2	103.8	0.4	64.3	0.4	9.8	0.1	77.8	0.7	8.9	0.2	0.2	<0.1
2873	331.1	0.3	45.4	0.1	8.9	<0.1	268.7	1.6	<0.1	<0.1	0.6	<0.1	1.1	<0.1	6.4	0.1
7217	320.4	0.3	7.5	<0.1	20.8	0.1	5.8	<0.1	2.2	<0.1	221.4	2.1	62.7	1.1	<0.1	<0.1
5551	316.8	0.3	53.9	0.1	17 .7	0.7	57.7	0.3	17.5	0.2	1.7	<0.1	9.3	0.2	<0.1	<0.1
0161	311.8	0.3	156.9	0.4	15.4	0.1	96.9	0.6	18.4	0.2	0.1	<0.1	24.1	0.4	<0.1	<0.1
3832	304.9	0.3	<0.1	<0.1	0.3	<0.1	294.7	1.8	<0.1	<0.1	0.9	<0.1	<0.1	<0.1	8.9	0.2
7992	301.5	0.3	72.8	0.2	27.8	0.1	67.7	0.4	34.4	0.3	<0.1	<0.1	66.5	1.2	32.3	0.7
2819	291.9	0.2	143.1	0.3	6.6	<0.1	11.9	0.1	2.2	<0.1	<0.1	<0.1	126.9	2.2	1.1	<0.1
5722	289.6	0.2	23.0	0.1	227.6	0.9	16.3	0.1	1.6	<0.1	9.0	0.1	12.1	0.2	<0.1	<0.1
1794	280.0	0.2	92.6	0.2	126.8	0.5	15.2	0.1	27.9	0.3	<0.1	<0.1	17.5	0.3	<0.1	<0.1
5571	275.9	0.2	152.2	0.4	89.6	0.3	22.1	0.1	7.1	0.1	0.2	<0.1	3.0	0.1	1.6	<0.1
5962	273.0	0.2	18.2	<0.1	77.8	0.3	0.1	<0.1	54.4	0.5	119.9	1.2	2.6	<0.1	<0.1	<0.1
5983	265.6	0.2	82.0	0.2	114.3	0.4	45.4	0.3	20.1	0.2	<0.1	<0.1	3.8	0.1	<0.1	<0.1
3321	246.4	0.2	<0.1	<0.1	5.4	<0.1	239.5	1.4	1.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
5161	245.7	0.2	28.3	0.1	48.8	0.2	122.1	0.7	10.9	0.1	9.6	0.1	0.3	<0.1	25.8	0.5
3613	227.1	0.2	12.8	<0.1	15.2	0.1	188.3	1.1	9.1	0.1	<0.1	<0.1	<0.1	<0.1	1.7	<0.1
3841	219.6	0.2	2.2	<0.1	81.0	0.3	127.0	0.8	<0.1	<0.1	2.2	<0.1	0.4	<0.1	6.8	0.1
7216	216.8	0.2	25.9	0.1	106.8	0.4	34.3	0.2	5.8	0.1	30.9	0.3	0.5	<0.1	12.6	0.3
5231	211.2	0.2	22.5	0.1	112.1	0.4	39.5	0.2	29.1	0.3	7.0	0.1	0.1	<0.1	1.0	<0.1
7261	187.2	0.2	0.9	<0.1	78.1	0.3	2.3	<0.1	1.9	<0.1	50.7	0.5	53.3	0.9	0.1	<0.1
1475	184.7	0.2	184.1	0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.6	<0.1	<0.1	<0.1	<0.1	<0.1
2643	184.4	0.2	8.3	<0.1	147.7	0.6	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	28.2	0.6
3411	182.9	0.2	3.4	<0.1	9.2	<0.1	79.8	0.5	39.6	0.4	10.6	0.1	<0.1	<0.1	40.5	0.8
5931	181.7	0.2	146.6	0.4	20.6	0.1	13.4	0.1	0.3	<0.1	<0.1	<0.1	0.5	<0.1	0.3	<0.1
4311	178.3	0.2	96.3	0.2	74.0	0.3	8.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
3823	169.1	0.1	88.2	0.2	42.9	0.2	17.7	0.1	<0.1	<0.1	17.3	0.2	<0.1	<0.1	2.9	0.1
8299	168.9	0.1	17.2	<0.1	85.1	0.3	7.4	<0.1	<0.1	<0.1	58.6	0.6	0.5	<0.1	<0.1	<0.1
7534	168.5	0.1	59.2	0.1	57.0	0.2	18.2	0.1	15.5	0.1	18.3	0.2	0.2	<0.1	<0.1	<0.1
3851	165.2	0.1	0.1	<0.1	24.0	0.1	0.8	<0.1	16.9	0.2	0.2	<0.1	87.1	1.5	36.1	0.7
0782	164.1	0.1	76.4	0.2	52.2	0.2	14.5	0.1	6.2	0.1	0.5	<0.1	13.5	0.2	0.8	<0.1
2951	163.8	0.1	113.4	0.3	11.9	<0.1	10.9	0.1	27.2	0.3	<0.1	<0.1	<0.1	<0.1	0.4	<0.1
2879	163.4	0.1	61.1	0.1	3.2	<0.1	67.9	0.4	4.6	<0.1	23.6	0.2	0.1	<0.1	2.9	0.1
4811	162.6	0.1	81.7	0.2	63.0	0.2	1.0	<0.1	16.9	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
0181	160.4	0.1	53.7	0.1	5.2	<0.1	12.8	0.1	52.1	0.5	1.0	<0.1	35.5	0.6	0.1	<0.1
3452	160.0	0.1	9.6	<0.1	23.3	0.1	127.1	0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
3479	156.5	0.1	0.6	<0.1	17.7	0.1	0.8	<0.1	1.2	<0.1	136.2	1.3	<0.1	<0.1	<0.1	<0.1

APPENDIX A-1 (Continued)

SIC Code**	Total Waste Amount	%	Waste Management Category: Recycling Amount	%	Sanitary Landfills Amount	%	Other Amount	%	Treatment Amount	%	Public Sewers Amount	%	Disposed on Property Amount	%	Permitted Facilities Amount	%
2434	155.7	0.1	80.4	0.2	51.7	0.2	14.3	0.1	0.7	<0.1	<0.1	<0.1	0.6	<0.1	8.0	0.2
3317	152.0	0.1	<0.1	<0.1	<0.1	<0.1	152.0	0.9	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
8081	146.8	0.1	10.8	<0.1	30.3	0.1	20.7	0.1	0.1	<0.1	48.1	0.5	36.0	0.6	0.8	<0.1
0729	144.6	0.1	107.6	0.3	24.2	0.1	5.0	<0.1	0.4	<0.1	0.5	<0.1	7.0	0.1	<0.1	<0.1
8221	144.6	0.1	33.3	0.1	76.3	0.3	2.9	<0.1	3.0	<0.1	20.6	0.2	7.9	0.1	0.6	<0.1
7629	140.0	0.1	24.3	0.1	96.7	0.4	12.7	0.1	1.3	<0.1	2.6	<0.1	2.5	<0.1	<0.1	<0.1
8069	135.1	0.1	0.4	<0.1	17.9	0.1	28.3	0.2	13.5	0.1	37.5	0.4	37.5	0.6	<0.1	<0.1
3531	134.0	0.1	4.4	<0.1	37.6	0.1	87.4	0.5	4.6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
3714	129.8	0.1	87.9	0.2	40.0	0.1	0.3	<0.1	0.3	<0.1	0.4	<0.1	0.9	<0.1	<0.1	<0.1
3573	129.2	0.1	0.4	<0.1	10.1	<0.1	90.2	0.5	0.7	<0.1	1.8	<0.1	<0.1	<0.1	26.1	0.5
9112	127.2	0.1	55.1	0.1	46.6	0.2	15.7	0.1	0.3	<0.1	7.0	0.1	2.5	<0.1	<0.1	<0.1
0174	125.5	0.1	82.7	0.2	16.6	0.1	2.9	<0.1	2.8	<0.1	<0.1	<0.1	20.4	0.4	<0.1	<0.1
2952	121.1	0.1	121.1	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
9641	119.9	0.1	12.9	<0.1	22.3	0.1	9.4	0.1	44.4	0.4	4.8	<0.1	20.1	0.3	5.9	0.1
7622	119.7	0.1	3.3	<0.1	102.0	0.4	2.7	<0.1	<0.1	<0.1	0.6	<0.1	11.1	0.2	<0.1	<0.1
8249	116.5	0.1	54.4	0.1	12.8	<0.1	14.3	0.1	22.3	0.2	3.0	<0.1	9.6	0.2	<0.1	<0.1
5599	115.9	0.1	60.9	0.1	44.4	0.2	7.2	<0.1	1.1	<0.1	2.1	<0.1	<0.1	<0.1	0.1	<0.1
7692	113.0	0.1	22.1	0.1	51.7	0.2	34.4	0.2	2.1	<0.1	2.1	<0.1	0.4	<0.1	0.3	<0.1
5198	110.0	0.1	36.7	0.1	36.3	0.1	22.0	0.1	<0.1	<0.1	<0.1	<0.1	1.1	<0.1	13.8	0.3
8072	109.4	0.1	26.7	0.1	73.7	0.3	2.4	<0.1	1.5	<0.1	3.0	<0.1	2.1	<0.1	<0.1	<0.1
3569	109.2	0.1	6.8	<0.1	29.3	0.1	9.7	0.1	20.8	0.2	4.8	<0.1	1.1	<0.1	36.7	0.8
5271	108.1	0.1	6.8	<0.1	95.4	0.4	2.1	<0.1	0.6	<0.1	0.1	<0.1	0.1	<0.1	3.1	0.1
0291	107.3	0.1	46.0	0.1	28.5	0.1	1.7	<0.1	2.3	<0.1	4.6	<0.1	16.8	0.3	7.5	0.2
7391	107.2	0.1	3.8	<0.1	4.2	<0.1	30.8	0.2	2.2	<0.1	9.5	0.1	1.3	<0.1	55.4	1.1
3629	102.7	0.1	<0.1	<0.1	2.8	<0.1	<0.1	<0.1	<0.1	<0.1	99.9	1.0	<0.1	<0.1	<0.1	<0.1
3482	100.7	0.1	<0.1	<0.1	0.8	<0.1	99.9	0.6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
0170	100.0	0.1	25.2	0.1	2.4	<0.1	54.8	0.3	2.3	<0.1	<0.1	<0.1	15.2	0.3	<0.1	<0.1
0751	99.0	0.1	10.1	<0.1	56.1	0.2	0.1	<0.1	<0.1	<0.1	32.5	0.3	0.2	<0.1	<0.1	<0.1
3999	96.5	0.1	18.7	<0.1	21.9	0.1	41.2	0.2	0.4	<0.1	7.5	0.1	0.4	<0.1	6.4	0.1
2791	94.1	0.1	2.1	<0.1	6.5	<0.1	3.4	<0.1	0.1	<0.1	77.2	0.7	4.8	0.1	<0.1	<0.1
5251	93.2	0.1	55.8	0.1	26.1	0.1	5.3	<0.1	0.8	<0.1	4.3	<0.1	0.5	<0.1	0.4	<0.1
4231	93.0	0.1	70.8	0.2	3.8	<0.1	14.1	0.1	4.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2834	90.6	0.1	5.4	<0.1	22.1	0.1	32.2	0.2	4.8	<0.1	<0.1	<0.1	25.7	0.4	0.3	<0.1
3724	89.7	0.1	27.5	0.1	62.0	0.2	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1
8071	88.1	0.1	27.4	0.1	11.2	<0.1	3.0	<0.1	23.4	0.2	20.2	0.2	0.6	<0.1	2.1	<0.1
5399	82.5	0.1	11.8	<0.1	22.0	0.1	0.4	<0.1	0.2	<0.1	45.6	0.4	2.5	<0.1	<0.1	<0.1
7694	79.9	0.1	11.3	<0.1	59.1	0.2	7.7	<0.1	0.1	<0.1	<0.1	<0.1	0.8	<0.1	0.7	<0.1
3269	77.2	0.1	0.2	<0.1	0.5	<0.1	<0.1	<0.1	76.5	0.7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
4131	75.2	0.1	21.2	0.1	29.9	0.1	22.8	0.1	1.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
4121	74.7	0.1	46.0	0.1	23.0	0.1	4.3	<0.1	<0.1	<0.1	0.1	<0.1	0.1	<0.1	1.1	<0.1
4111	73.2	0.1	69.4	0.2	2.2	<0.1	1.6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
9621	72.6	0.1	12.1	<0.1	33.8	0.1	2.6	<0.1	1.0	<0.1	16.8	0.2	<0.1	<0.1	6.2	0.1
3469	71.8	0.1	<0.1	<0.1	34.2	0.1	11.2	0.1	5.0	<0.1	17.5	0.2	0.4	<0.1	3.4	0.1
7519	71.7	0.1	33.5	0.1	15.9	0.1	15.9	0.1	0.5	<0.1	<0.1	<0.1	4.5	0.1	1.5	<0.1
3612	70.8	0.1	<0.1	<0.1	0.2	<0.1	70.6	0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

APPENDIX A-1 (Continued)

SIC Code**	Total Waste		Waste Management Category													
			Recycling		Sanitary Landfills		Other		Treatment		Public Sewers		Disposed on Property		Permitted Facilities	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
4119	69.1	0.1	21.6	0.1	30.6	0.1	9.4	0.1	<0.1	<0.1	3.0	<0.1	<0.1	<0.1	4.4	0.1
1743	67.0	0.1	0.2	<0.1	2.2	<0.1	64.4	0.4	0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1
3728	67.0	0.1	9.6	<0.1	27.6	0.1	5.5	<0.1	1.3	<0.1	0.7	<0.1	<0.1	<0.1	22.4	0.5
3993	65.0	0.1	17.0	<0.1	36.5	0.1	4.5	<0.1	2.4	<0.1	1.6	<0.1	2.3	<0.1	0.8	<0.1
3341	62.6	0.1	16.5	<0.1	<0.1	<0.1	32.4	0.2	13.6	0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
3537	62.5	0.1	0.4	<0.1	60.9	0.2	1.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Totals:	**113,481.0**	**97.6**	**40,521.8**		**25,855.7**		**16,149.7**		**10,607.6**		**10,197.4**		**5,594.9**		**4,558.1**	

* There are 514 Standard Industrial Classification (SIC) codes included in the survey data base. The 152 SIC codes grouped in this table comprise 97.6 percent of the total SQG hazardous waste produced annually in Florida. Each of the remaining 362 SIC codes contributes less than 0.1 percent of the total SQG hazardous waste generated. The aggregate total hazardous waste generated by these 362 industries is 3,561.7 metric tons, approximately 2.4%.

** Appendix A-2 shows a description for each of the 514 SIC codes included in the county surveys.

APPENDIX A-2

DESCRIPTION OF STANDARD INDUSTRIAL CLASSIFICATION (SIC) CODES

SIC Code	Description
0115	Corn
0130	Field Crops, Except Cash Grains
0132	Tobacco
0133	Sugar Crops
0135	Field Crops, NEC
0161*	Vegetable and Melon Farmers
0170*	Fruits and Tree Nuts
0171	Berry Crops
0174*	Citrus Fruit Growers
0180	Horticultural Specialities
0181*	Ornamental Floriculture & Nursery Products
0191	General Farms, Primarily Crop
0210	Livestock, Except Dairy, Poultry, and Animal Specia
0212	Beef Cattle, Except Feedlots (e.g., Ranches)
0241	Dairy Farms
0251	Broiler, Fryer, Roaster Chickens
0271	Fur Bearing Animals and Rabbits
0273	Animal Specialties
0275	Animal Specialist and Services
0291*	General Livestock
0600	Agriculture, Forestry and Fishing, NEC
0700	Agricultural Services
0710	Soil Preparation Services, NEC
0711	Soil Preparation Services
0720	Crop Services
0721	Crop Planting, Cultivation, and Protection
0722	Crop Harvesting, Primarily by Machine
0723	Crop Preparation Services for Market
0729*	General Crop Services
0742	Veterinary Services for Animal Specialties
0751*	Livestock Services, Except Services for Animal Spe
0752	Animal Specialty Services
0753	Animal Specialty Services, NEC
0762	Farm Management Services
0780	Landscape and Horticultural Services
0781	Landscape Consulting and Planning
0782*	Lawn and Garden Services
0783	Ornamental Shrub and Tree Services
0800	Forestry
0806	Forestry Operations
0807	Forestry Services, NEC
0811	Timber Tracts
0821	Forest Nurseries & Tree Seed Gathering & Extraction
0851	Forestry Services
0913	Shellfish
1475*	Phosphate Rock
1520	General Building Contractors - Residential

APPENDIX A-2 (Continued)

SIC Code	Description
1521	Single - Family Housing Gen. Contractors
1523	General Building Contractors - Residential
1539	Operative Builders
1600	Construction Other Than Building Const. - General
1611*	Highway and Street Construction
1620	Heavy Construction, Except Highway and Street Cons
1622	Bridge, Tunnel, and Elevated Highway Construction
1711*	Plumbing, Heating (Except Electric) and Air Condit.
1721*	Painting, Paper Hanging, and Decorating, Heavy Con.
1731	Electrical Work
1740	Masonry, Stonework, Tilesetting and Plastering
1742	Plastering, Drywall and Insulation
1743*	Terrazzo, Tile, Marble, and Mosaic Work
1752	Floor Laying and Other Floorwork, NEC
1761*	Roofing and Sheet Metal Work
1781	Water Well Drilling
1782	Water Well Drilling, NEC
1793	Glass and Glazing Work
1794*	Excavating and Foundation Work
1799*	Special Trade Contractors, NEC
2021	Creamery Butter
2032*	Canned Specialties
2037	Frozen Fruits, Juices and Vegetables
2048	Prepared Feeds (Animals and Fowl), NEC
2086	Bottled and Canned Soft Drinks
2087	Flavoring Extracts and Syrup, NEC
2091	Canned and Cured Fish and Seafoods
2099	Food Preparation, NEC
2221	Broad Woven Fabric Mills
2253	Knit Outerwear Mills
2257	Circular Knit Fabric Mills
2261	Finishers of Broad Woven Fabrics of Cotton
2262	Finishers of Broad Woven Fabrics of Man-Made Fiber
2279	Carpets and Rugs, NEC
2291*	Felt Goods, Except Woven Felts and Hats
2389	Apparel and Accessories, NEC
2394	Canvas and Related Products
2422	Sawmills and Planing Mills
2431	Millwork
2434*	Wood Kitchen Cabinets
2435	Hardwood Veneer and Plywood
2436	Softwood Veneer and Plywood
2448	Wood Pallets and Skids
2451	Mobile Homes
2452	Prefabricated Wood Buildings and Components
2491	Wood Preserving
2492	Particleboard
2499	Wood Products, NEC
2511	Wood Household Furniture, Except Upholstered

APPENDIX A-2 (Continued)

SIC Code	Description
2514	Metal Household Furniture
2519	Household Furniture, NEC
2521	Wood Office Furniture
2522	Metal Office Furniture
2531	Public Building and Related Furniture
2538	Public Building and Related Furniture, NEC
2541	Wood Partitions and Fixtures
2542	Metal Partitions and Fixtures
2611	Pulp Mills
2621	Paper Mills, Except Building Paper Mills
2631	Paperboard Mills
2641	Paper Coating and Glazing
2643*	Bags, Except Textile Bags
2645	Die-Cut Paper and Paperboard and Cardboard
2649	Converted Paper and Paperboard Products, NEC
2651	Folding Paperboard Boxes
2653	Corrugated and Solid Fiber Boxes
2654	Sanitary Food Containers
2655	Fiber Cans, Tubes, Drums, and Similar Products
2661	Building Paper and Building Board Mills
2679	Paper and Allied Products
2699	Paper and Allied Products, NEC
2701	Printing, Publishing and Allied Industries
2711*	Newspapers: Publishing and Printing
2721	Periodicals: Publishing and Printing
2731	Books: Publishing and Printing
2732	Book Printing
2751*	Commercial Printing, Letterpress and Screen
2752*	Commercial Printing, Lithographic
2753	Engraving and Plate Printing
2754	Commercial Printing, Gravure
2761	Manifold Business Forms
2771	Greeting Card Publishing
2782	Blankbooks, Looseleaf Binders, and Devices
2789	Bookbinding and Related Work
2791*	Typesetting
2799	Service Industries for the Printing Trade
2812	Alkalies and Chlorine
2813	Industrial Cases
2815	Industrial Inorganic Chemicals
2819*	Industrial Inorganic Chemicals, NEC
2821*	Plastics Materials, Synthetic Resins, and Non-Vulc
2822	Synthetic Rubber
2824	Synthetic Organic Fibers, Except Cellulosic
2831	Biological Products
2833	Medicinals and Botanicals
2834*	Pharmaceutical Preparations
2841	Soap and Other Detergents, Except Speciality Cleaners
2842	Specialty Cleaners, Polishes, and Sanitation Preparations

APPENDIX A-2 (Continued)

SIC Code	Description
2844	Perfumes, Cosmetics, and Other Toilet Preparations
2851*	Paint and Allied Products
2865	Cyclic (Coal Tar) Crudes, and Cyclic Intermediates
2869	Industrial Organic Chemicals, NEC
2873*	Nitrogenous Fertilizers
2874	Phosphatic Fertilizers
2879*	Pesticide and Agricultural Chemicals, NEC
2891	Adhesives and Sealants
2892	Explosives
2893	Printing Ink
2898	Misc. Chemical Products
2899*	Chemical Preparations, NEC
2911	Petroleum Refining
2951*	Paving Mixtures and Blocks
2952*	Asphalt Felts and Coatings
2999	Products of Petroleum and Coal, NEC
3008	Rubber and Misc. Plastic Products, NEC
3069	Fabricated Rubber Products, NEC
3070	Misc. Plastic Products
3079*	Miscellaneous Plastic Products, NEC
3111	Leather Tanning and Finishing
3135	Boot & Shoe Cut Stock & Findings, NEC
3144	Women's Footwear, Except Athletic
3161	Luggage
3171	Women's Handbags & Purses
3172	Personal Leather Goods
3199	Leather Goods, NEC
3221	Glass Containers
3231	Products of Purchased Glass
3251	Brick and Structural Clay Tile
3253*	Ceramic Wall and Floor Tile
3261	Vitreous China Plumbing Fixtures and Bathroom Acce
3262	Vitreous China Table and Kitchen Articles
3269*	Pottery Products, NEC
3271	Concrete Block and Brick
3272	Concrete Products, NEC
3273	Ready-Mix Concrete
3291	Abrasive Products
3293	Gaskets, Packing and Sealing Devices
3312	Blast Furnaces, Steel Works, and Rolling Mills
3313	Electrometallurgical Products
3315	Steel Wire Drawing and Steel Nails and Spikes
3317*	Steel Pipe and Tubes
3321*	Gray Iron Foundries
3325	Steel Foundries, NEC
3339	Primary Smelting and Refining of Nonferrous Metals
3341*	Secondary Smelting and Refining of Nonferrous Metals
3354*	Aluminum Extruded Products
3355	Aluminum Rolling and Drawing, NEC

APPENDIX A-2 (Continued)

SIC Code	Description
3356	Rolling, Drawing and Extruding of Nonferrous Metals
3357	Drawing and Insulating of Nonferrous Wire
3361	Aluminum Foundries (Castings)
3362	Brass, Bronze, Copper and Copper Base Alloy Foundries
3369	Nonferrous Foundries (Castings), NEC
3398	Metal Heat Treating
3399	Primary Metal Products, NEC
3411*	Metal Cans
3412	Metal Shipping Barrels, Drums, Kegs, and Pails(Dr
3421	Cutlery
3423	Hand and Edge Tools, Except Machine Tools and Hand
3429	Hardware, NEC
3431	Enameled Iron and Metal Sanitary Ware
3422	Plumbing Fixture Fittings and Trim (Brass Goods)
3433	Heating Equipment, Except Electric and Warm Air Fu
3441*	Fabricated Structural Metal
3442*	Metal Doors, Sash, Frames, Moldings, and Trims
3443	Fabricated Plate Work
3444*	Sheet Metal Work
3446	Architectural and Ornamental Metal Work
3448	Prefabricated Metal Buildings and Components
3449	Miscellaneous Metal Work
3451	Screw Machine Products
3452*	Bolts, Nuts, Screws, Rivets, and Washers
3460	Metal Forging and Stamping
3465	Automotive Stampings
3469*	Metal Stampings, NEC
3471*	Electroplating, Polishing, Plating, Anodizing, and
3479*	Coating, Engraving, and Allied Services, NEC
3482*	Small Arms Ammunition
3483	Ammunition, Except for Small Arms, NEC
3489	Ordnance and Accessories, NEC
3492	Misc. Fabricated Metal Products
3493	Steel Springs, Except Wire
3494	Valves and Pipe Fittings
3496	Misc. Fabricated Wire Products
3499	Fabricated Metal Products, NEC
3511	Steam, Gas, and Hydraulic Turbines
3519	Internal Combustion Engines, NEC
3523	Farm Machinery and Equipment
3524	Garden Tractors & Lawn & Garden Equipment
3531*	Construction Machinery and Equipment
3532	Mining Machinery and Equipment, Except Oil Field
3533	Oil Field Machinery and Equipment
3535	Conveyors and Conveying Equipment
3537*	Industrial Trucks, Tractors, Trailers, and Stacker
3541	Machine Tools, Metal Cutting
3542	Machine Tools, Metal Forming
3544	Special Dies and Tools, Die Sets, Jigs and Fixture

APPENDIX A-2 (Continued)

SIC Code	Description
3546	Power Driven Hand Tools
3549	Metal Working Machinery, NEC
3551*	Food Products Machinery
3552	Textile Machinery
3553	Woodworking Machinery
3554	Paper Industries Machinery
3555	Printing Trades Machinery and Equipment
3559	Special Industry Machinery, NEC
3561	Pumps and Pumping Equipment
3563	Air and Gas Compressors
3564	Blower and Exhaust Ventilation Fans
3567	Industrial Process Furnace & Ovens
3568	Mechanical Power Transmission Equipment, NEC
3569*	General Industrial Machinery and Equipment, NEC
3570	Office, Computing and Accounting Machinery
3573*	Electronic Computing Equipment
3579	Office Machines, NEC
3582	Commercial Laundry, Dry Cleaning, and Pressing Mac
3585	Air Conditioning and Warm Air Heating Equipment An
3586	Measuring and Dispensing Pumps
3589	Service Industry Machines, NEC
3590*	Misc. Machinery, Except Electrical
3592	Carburetors, Pistons, Piston Rings & Valves
3599*	Machinery, Except Electrical, NEC
3612*	Power, Distribution and Specialty Transformers
3613*	Switchgear and Switchboard Apparatus
3621	Motors & Generators
3522	Industrial Controls
3629*	Electrical Industrial Apparatus, NEC
3632	Household Refrigerators and Home and Farm Freezers
3634	Electric Housewares and Fans
3639	Household Appliances, NEC
3641	Electric Lamps
3643	Current-Carrying Wire Devices
3645	Residential Electric Lighting Fixtures
3646	Commercial, Industrial, and Institutional Lighting
3647	Vehicular Lighting Equipment
3651	Radio & Television Receiving Sets
3652	Phonograph Records and Pre-Recorded Magnetic Tape
3662*	Radio and Television Transmitting, Signaling, and
3673	X-Ray Apparatus and Tubes
3674	Semiconductors and Related Devices
3675	Electronic Capacitors
3677	Electronic Coils, Transformers, and Other Inductor
3679*	Electronic Components, NEC
3691*	Storage Batteries
3692*	Primary Batteries, Dry and Wet
3710	Motor Vehicles and Motor Vehicles Equipment
3711	Motor Vehicles and Passenger Car Bodies

APPENDIX A-2 (Continued)

SIC Code	Description
3714*	Motor Vehicle Parts and Accessories
3716	Motor Homes
3721	Aircraft
3724*	Aircraft Engines and Engine Parts
3728*	Aircraft Parts and Auxiliary Equipment, NEC
3731*	Ship Building and Repairing
3732*	Boat Building and Repairing
3761	Guided Missiles and Space Vehicles
3782	Transportation Equipment
3811	Engineering, Scientific, Laboratory and Research I
3819*	Measuring, Analyzing and Controlling Instruments
3822	Automatic Controls for Regulating Residential and
3823*	Industrial Instruments for Measuring, Display, and
3824	Totalizing Fluid Meters and Counting Devices
3825	Instruments for Measuring and Testing of Electricity
3829	Measuring and Controlling Devices, NEC
3832*	Optical Instruments and Lenses
3841*	Surgical and Medical Instruments and Apparatus
3842	Orthopedic, Prosthetic, and Surgical Appliances an
3843	Dental Equipment and Supplies
3851*	Ophthalmic Goods
3861	Photographic Equipment and Supplies
3911*	Jewelry, Precious Metal
3914	Silverware, Plated Ware, and Stainless Steel Ware
3915	Jeweler's Findings & Materials & Lapidary Work
3931	Musical Instruments
3949	Sporting and Athletic Goods, NEC
3961	Costume Jewelry and Costume Novelties, Except Prec
3964	Needles, Pins, Hooks and Eyes, and Similar Notions
3993*	Signs and Advertising Displays
3995	Burial Caskets
3998	Misc. Manufacturing Industries
3999*	Manufacturing Industries
4011	Railroads, Line-Haul Operating
4100	Local Suburban Transit and Interurban Highway
4111*	Local Suburban Transit
4119*	Local Passenger Transportation, NEC
4121*	Taxicabs
4131*	Intercity and Rural Highway Passenger Transportation
4151	School Buses
4200	Motor Freight Transportation and Warehousing
4212*	Local Trucking Without Storage
4213*	Trucking, Except Local
4214	Local Trucking With Storage
4231*	Trucking Terminal Facilities
4311*	U.S. Postal Service (Vehicle Maintenance Only)
4395	U.S. Postal Service, NEC
4411	Deep Sea Foreign Transportation
4454	Towing and Tugboat Services

APPENDIX A-2 (Continued)

SIC Code	Description
4459	Local Water Transportation, NEC
4463	Marine Cargo Handling
4468	Services Incidental to Water Transportation
4469*	Water Transportation Services, NEC
4511*	Air Transportation, Certificated Carriers
4521	Noncertificated Air Transportation
4582*	Airports and Flying Fields
4583	Airport Terminal Services
4613	Refined Petroleum Pipe Lines
4811*	Telephone Communication (Wire or Radio)
4832	Radio Broadcasting
4833	Television Broadcasting
4911*	Electric Services
4925	Mixed, Manufactured or Liquified Petroleum Gas
4931	Electrical & Other Services
4932	Gas & Other Services
4939	Combination Utilities, NEC
4952*	Sewerage Systems
4953*	Refuse Systems
4959	Sanitary Services, NEC
4990	Electric, Gas and Sanitary Services
5010	Motor Vehicles and Automotive Parts and Supplies
5012	Automobiles and Other Motor Vehicles
5013	Automobile Parts and Supplies
5014	Tires and Tubes
5063	Electrical Apparatus and Equipment
5074	Plumbing and Hydronic Equipment
5082	Construction and Mining Machinery
5083	Farm Machinery and Equipment
5084	Industrial Machinery and Equipment
5093*	Scrap and Waste Materials Wholesale
5148	Fresh Fruits and Vegetables
5150*	Farm Products - Raw Materials
5161*	Chemicals and Allied Products Wholesale
5171	Petroleum Bulk Stations and Terminals
5172	Petroleum Products, NEC
5191	Farm Supplies
5198*	Paints, Varnishes and Supplies
5211	Lumber and Other Building Materials
5213	Lumber and Other Building Material Dealers
5231*	Paint, Glass and Wallpaper Stores
5251*	Hardware Stores
5261	Retail Nurseries and Garden Stores
5271*	Mobile Home Dealers
5311*	Department Stores
5371	General Merchandise Stores
5399*	Miscellaneous General Merchandise Stores
5411	Grocery Stores
5440	Candy, Nut and Confectionary Stores

APPENDIX A-2 (Continued)

SIC Code	Description
5511*	Motor Vehicle Dealers (New and Used)
5521*	Motor Vehicle Dealers (Used Only)
5531*	Auto and Home Supply Stores
5541*	Gasoline Service Stations Retail
5551*	Boat Dealers
5561	Recreational and Utility Trailer Dealers
5571*	Motorcycle Dealers
5599*	Motorcycle Dealers, NEC
5699	Misc. Apparel and Accessories
5714	Drapery and Upholstery Stores
5719	Misc. Home Furnishing Stores
5722*	Household Appliance Stores, Retail
5851	Eating and Drinking Places
5931*	Used Merchandise Stores
5933	Misc. Retail Stores
5941	Sporting Goods and Bicycle Shops
5962*	Automatic Merchandising Machine Operators
5980	Fuel and Ice Dealers
5982	Fuel and Ice Dealers, NEC
5983*	Fuel Oil Dealers
5984	Liquefied Petroleum Gas Dealers
6722	Management Investment Offices, Open-End
7211	Power Laundries, Family and Commercial
7212	Garment Pressing and Cleaning Agents
7213	Linen Supply
7215	Coin Operated Laundries and Dry Cleaning
7216*	Dry Cleaning Plants, Except Rug Cleaners
7217*	Carpet and Upholstery
7218	Industrial Launderers
7221	Photographic Studios, Portrait
7231	Beauty Shops
7261*	Funeral Services and Crematories
7299	Misc. Personal Services
7312	Outdoor Advertising Services
7319	Advertising Nec
7321	Reporting and Collection Agencies (Credit)
7331	Direct Mail Advertising Services
7332	Blueprint and Photocopying Services
7333*	Commercial Photography Art, and Services
7342*	Disinfecting and Extermination Services
7349*	Cleaning and Maintenance Services to Dwellings
7359	News Syndicate
7391*	Research and Development Laboratories
7394	Equipment Rental and Leasing Services
7395*	Photofinishing Laboratories
7397	Commercial Testing Laboratories
7398	Misc. Business Services
7399*	Fire Extinguisher Charging Services
7432	Services, Nec

APPENDIX A-2 (Continued)

SIC Code	Description
7512*	Passenger Car Rental and Leasing, Without Drivers
7513*	Truck Rental and Leasing, Without Drivers
7519*	Utility Trailer and Recreational Vehicle Rental
7530	Automotive Repair and Maintenance Shops
7531*	Top and Body Repair Shops, Automotive
7534*	Tire Retreading and Repair Shops, Automotive
7535*	Paint Shops, Automotive
7538*	General Automotive Repair Shops
7539*	Automotive Repair Shops, Nec
7549	Automotive Services, Except Repair and Car Washes
7558	Automotive Services, Except Repair
7611	Misc. Repair Services
7614	Misc. Repair Services, Nec
7621	Radio & Television Repair Shops
7622*	Radio & Television Repair Shops, Nec
7623	Refrigeration & Air Conditioning Services & Repair
7629*	Electrical & Electronic Repair Shops, Nec
7631	Watch, Clock, and Jewelry Repair
7641*	Reupholstery and Furniture Repair
7680	Misc. Repair Services and Related Services
7692*	Welding Repair
7694*	Armature Rewinding Shops
7699*	Repair Shops and Related Services, NEC (including
7819	Services Allied to Motion Picture Production
7922	Theatrical Producers (Except Motion Pictures) and
7992*	Public Golf Courses
7993	Coin-operated Amusement Devices
7996	Amusement Parks
7997	Membership Sports and Recreational Clubs
7999*	Amusement and Recreational Services NEC
8059	Nursing and Personal Care Facilities, NEC
8060*	Hospitals
8062*	General Medical and Surgical Hospitals
8063	Psychiatric Hospitals
8069*	Specialty Hospitals, Except Psychiatric
8071*	Medical Laboratories
8072*	Dental Laboratories
8081*	Outpatient Care Facilities
8211	Elementary and Secondary Schools
8212	Elementary and Secondary Schools
8213	Elementary and Secondary Schools
8215	Elementary and Secondary Schools
8216	Elementary and Secondary Schools
8218	Elementary and Secondary Schools
8219	Elementary and Secondary Schools
8221*	Colleges, Universities, and Professional Schools
8222	Junior Colleges
8244	Business and Secretarial Schools
8249*	Vocational Schools, Except Vocational High Schools

APPENDIX A-2 (Continued)

SIC Code	Description
8299*	Schools and Educational Services, NEC
8331	Job Training and Vocational Rehabilitation Service
8411	Museums and Art Galleries
8421	Arboreta, Botanical, and Zoological Gardens
8599	Public Services NEC
8711	Misc. Public Services
8799	Misc. Public Services, NEC
8911	Engineering and Architectural Services
8922	Noncommercial Educational, Scientific and Research
8999*	Services, NEC
9100	Executive, Legislative, and General Government
9111	Executive Offices
9112*	Executive Offices, NEC
9131*	Executive and Legislative Combined
9199	General Governmental, NEC
9221	Police Protection
9223	Correctional Institutions
9231	Justice, Public Order and Safety
9431	Administration of Public Health
9511	Air, Water and Solid Waste Management
9512	Land, Mineral and Wildlife Conservation
9621*	Regulation,Admin of Transportation
9641*	Regulation of Agriculture Marketing
9711*	National Security
9880	Public Administration, NEC
9999*	Nonclassifiable Establishments

* The SIC Codes with an asterisk, are those industries that contribute 0.1% or more of the total SQG hazardous waste generated annually in Florida. These industries appear explicitly in Appendix A-1.